

ABSTRACT

The invention provides mitochondrially targeted antioxidant compounds. A compound of the invention comprises a lipophilic cation covalently coupled to an antioxidant moiety. In preferred embodiments, the lipophilic cation is the triphenyl phosphonium cation, and the compound is of the formula $P(Ph_3)^+XR^-Z^-$ where X is a linking group, Z is an anion and R is an antioxidant moiety. Also provided are pharmaceutical compositions containing the mitochondrially targeted antioxidant compounds, and methods of therapy or prophylaxis of patients who would benefit from reduced oxidative stress, which comprise the step of administering the compounds of the invention.